

US EPA ARCHIVE DOCUMENT

(7-30-97)

MRID No. 440156-01

**DATA EVALUATION RECORD
§ 71-4 -- AVIAN REPRODUCTION TEST**

1. **CHEMICAL:** Metolachlor

PC Code No.: 108801

2. **TEST MATERIAL:** CGA-24705 Technical

Purity: 97.3%

3. **CITATION:**

Authors: L.C. Taliaferro, M.C. Taliaferro, and V.C. Miller

Title: Metolachlor: The Reproductive Toxicity Test of CGA-24705 in Northern Bobwhite (*Colinus virginianus*)

Study Completion Date: May 7, 1996

Laboratory: EBA, Inc., Snow Camp, NC

Sponsor: Ciba-Geigy Corporation, Greensboro, NC

Laboratory Report ID: 029508

MRID No.: 440156-01

DP Barcode: D226603

4. **REVIEWED BY:** William Erickson, Biologist

Environmental Risk Branch III

Environmental Fate and Effects Division

Signature:

Date:

7/28/97

5. **APPROVED BY:** Kathryn Montague, Biologist

Environmental Risk Branch III

Environmental Fate and Effects Division

Signature:

Date:

7/30/97

6. **STUDY PARAMETERS/RESULTS SYNOPSIS:**

Test Organism: *Colinus virginianus*

Age at Test Initiation: 15 weeks

Study Duration: 24 weeks

Most sensitive endpoint: not determined

NOEC: not determined

LOEC: not determined

7. **CONCLUSIONS:** The study is not scientifically sound and does not meet the guideline requirement (71-4a) for an avian reproduction study with northern bobwhite.

8. ADEQUACY OF THE STUDY:

Classification: Invalid

Rationale: The percentage of 14-day-old survivors of the number of hatchlings was unacceptably low (55%) in the control group, and adult mortality occurred in five of the 18 control replicates.

9. GUIDELINE DEVIATIONS:

1. The egg storage humidity was not reported.
2. The temperature and humidity inside the hatcher were not reported.
3. Body weights of adults were measured at test initiation, week 10, and test termination. The guidelines recommend that body weights be measured at test initiation, biweekly up to week 8 or at the onset of egg laying, and at test termination.

10. SUBMISSION PURPOSE: Reregistration.**11. MATERIALS AND METHODS:****A. Test Organisms**

Guideline Criteria	Reported Information
Species A wild waterfowl species, preferably the mallard (<i>Anas platyrhynchos</i>), or an upland game species, preferably the northern bobwhite (<i>Colinus virginianus</i>)	Northern bobwhite (<i>Colinus virginianus</i>)
Age at beginning of test Birds should be approaching their first breeding season.	15 weeks old
Supplier All birds should be from the same source.	Birds were raised at EBA, Inc. from eggs obtained from Strickland Quail Farms, Pooler, GA.
Were birds pen-reared?	Yes

Guideline Criteria	Reported Information
Were birds phenotypically indistinguishable from wild birds?	Yes
Health observation period 2 to 6 weeks.	2 weeks
Were birds healthy and without excessive mortality prior to the test?	Yes

B. Test System

Guideline Criteria	Reported Information
Were pens for adult birds of adequate size and designed to conform to good husbandry practices?	Yes
Were pens for chicks of adequate size and designed to conform to good husbandry practices?	Yes
Were pens constructed of a nonbinding material such as galvanized or stainless steel?	Yes
Was adequate ventilation provided?	Yes
Temperature Approx. 21°C (70°F)	Range: 16.1 - 29.4°C
Relative humidity Approx. 55%	Mean: 62.1% Range: 40-84%
Lighting <u>First 8 weeks:</u> 7 h per day. <u>Thereafter:</u> 16-17 h per day. At least 6 footcandles at bird level.	First 8 weeks: 7 h per day. Thereafter: photoperiod was increased over a 13-day period to 17 h per day. Mean illumination: 11 foot candles.

Guideline Criteria	Reported Information
Diet A commercial breeder feed (or its equivalent) that is appropriate for the test species.	<p>Adults: 20% protein minimum 2.5% fat minimum 7% fiber maximum</p> <p>Chicks: 30% protein minimum 2.5% fat minimum 6.5% fiber maximum</p> <p>Neither adults nor offspring received any form of medication in the diet.</p>
Preparation of test diet A premixed containing the test substance should be mechanically mixed with basal diet. If an evaporative vehicle is used, it must be completely evaporated prior to feeding.	Test diets were prepared fresh weekly by mixing a base mix with the basal diet.
Was the premix stored under conditions which maintain stability?	Not reported
Was the diet analyzed to verify homogeneity and stability of the test substance?	Yes
Replenishment of feed	<p>Adult diets were prepared weekly and presented to the birds each Wednesday of the week. Additional diets were prepared when necessary.</p> <p>Feed and water were provided <i>ad libitum</i> for the adults and offspring.</p>

C. Test Design

Guideline Criteria	Reported Information
<u>Nominal concentrations</u> At least two concentrations other than the control are required; three or more are strongly recommended. The highest test concentrations should show a significant effect or be at or above the maximum field residue level.	Nominal concentrations: control, 50, 200, and 800 ppm ai.
<u>Control</u> Vehicle control.	Negative control
<u>Vehicle</u> Corn oil or other appropriate vehicle.	No vehicle or solvent was used.
<u>Vehicle amount (% of diet by weight)</u> Not more than 2%.	N/A
<u>Number of birds per pen</u> One male and 1 female per pen is strongly recommended. For quail, 1 male and 2 females may be acceptable. For ducks, 2 males and 5 females may be acceptable.	1 male and 1 female per pen
<u>Number of pens per group</u> At least 5 replicate pens are required for mallards housed in groups of 7. For other arrangements, at least 12 pens are required, but considerably more may be needed if birds are kept in pairs.	18 pens per group
<u>Pre-laying exposure duration</u> At least 10 weeks prior to the onset of egg-laying.	12 weeks
<u>Exposure duration with egg-laying</u> At least 10 weeks.	12 weeks

Guideline Criteria	Reported Information
<u>Withdrawal period</u> If reduced reproduction is evident, a withdrawal period of up to 3 weeks may be added to the test phase.	N/A

D. Egg Collection and Incubation

Guideline Criteria	Reported Information
<u>Were eggs collected daily?</u>	Yes
<u>Egg storage temperature</u> Approximately 16°C (61°F)	Approximately 10°C
<u>Egg storage humidity</u> Approximately 65%	Not reported
<u>Were eggs set weekly?</u>	Yes
<u>Were eggs candled for cracks prior to being set for incubation on Day 0?</u>	Yes
<u>Candling for fertility</u> Quail: approx. Day 11 Ducks: approx. Day 14	Eggs were candled between Day 10 and 12 for embryo viability and on Day 21 for embryo survival.
<u>Transfer of eggs to hatcher</u> Bobwhite: Day 21 Mallard: Day 23	Eggs were transferred on Day 21.
<u>Hatching temperature</u> 39°C (102°F) is recommended	The test protocol amendment stated (see p. 257) that it was maintained at approximately 36.0-38.0°C
<u>Hatching humidity</u> 70% is recommended	The test protocol amendment stated (see p. 257) that it was maintained at approximately 60-80%

Guideline Criteria	Reported Information
Day after egg set that chicks were removed and counted Bobwhite: Day 24 Mallard: Day 27	Chicks that had hatched were removed and counted on Day 23 or 24.

E. Eggshell Thickness Measurement

Guideline Criteria	Reported Information
Collection Schedule At least once every two weeks (Week 1, 3, 5, 7 and 9).	One Egg was collected, when available, for eggshell thickness weekly from odd numbered pens during odd numbered weeks and from even numbered pens during even numbered weeks.
Were shells opened, washed, and air dry for at least 48 hours before measuring?	Yes; shells were air dried for 1 week.
Measurement 3-4 measurements per eggs to the nearest 0.01 mm.	5 measurements taken to the nearest 0.001 mm

12. REPORTED RESULTS:

Guideline Criteria	Reported Information
Quality assurance and GLP compliance statements were included in the report?	Yes
Did diet analysis verify the concentrations of test material?	Yes
Did diet analysis show that the test substance was stable and homogeneous?	Yes

Guideline Criteria	Reported Information
Were body weights of adults reported for test initiation and biweekly up to week 8 or the onset of egg laying?	Body weights were measured at test initiation, week 10, and at test termination.
Was average food consumption of adults reported at least biweekly?	Yes
<u>Reproductive Endpoints</u> The following endpoints should be reported: <ul style="list-style-type: none"> ● Eggs laid ● Eggs cracked ● Eggs set ● Viable embryos ● Live 3-week embryos ● Normal hatchlings ● 14-day-old survivors ● Weights of 14-day-old survivors ● Egg shell thickness ● Total food consumption ● Initial and final body weights, by sex 	All specified endpoints plus hatchling weights and eggs laid per day.
Were data reported by pen for all endpoints?	Yes

Reported Results: No overt signs of toxicity or treatment-related mortalities were reported. Significantly fewer eggs were laid at the 200 ppm ai level than in the control. The difference is not considered treatment-related, because there was no significant reduction in the number of eggs laid per day at the highest treatment concentration (800 ppm ai). The number of eggs set at the 200 ppm ai level was significantly less than the control. For the same reasons stated above, this effect was not considered treatment-related. No other reproductive parameters were significantly reduced when compared to the control.

13. VERIFIED STATISTICAL RESULTS:**Measurement Endpoint Means (standard deviation):**

Endpoint	Control	50 ppm	200 ppm	800 ppm
Eggs laid per hen	51 (11)	39* (12)	29* (16)	43 (20)
Eggs cracked	2 (2)	2 (2)	1 (2)	2 (2)
Eggs set	45 (11)	33 (12)	24 (15)	37 (19)
Viable embryos	42	28* 84	21* 89	34
Viable embryos of eggs set (%)	93	84	89	93
Live 3-wk embryos	41	27* 95	20* 95	33
Live 3-wk embryos of viable embryos (%)	98	95	95	95
Normal hatchlings	38	24* 88	17* 86	28
Normal hatchlings of live 3-wk embryos (%)	93	88	86	85
14-day-old survivors	21	12* 48	9* 51	15
14-day-old survivors of normal hatchlings (%)	55** 6.6 (0.5)	48	51	53
Egg shell thickness (mm)	0.195 (0.010)	0.197 (0.009)	0.191 (0.010)	0.187 (0.017)
Hatching weight (g)	6.6 (0.5)	6.6 (0.4)	6.6 (0.3)	6.3 (0.6)
14-day-old survivor-weight (g)	25.3 (2.0)	25.0 (2.7)	28.3 (3.8)	25.0 (3.7)
Mean food consumption (g)	454.3 (41.6)	430.0 (43.4)	432.4 (42.5)	429.0 (26.9)
Male weight gain (g)	208 (16)	200 (30)	214 (12)	206 (18)

Endpoint	Control	50 ppm	200 ppm	800 ppm
Female weight gain (g)	232 (26)	233 (30)	207* (30)	224 (34)

* statistically different from the control group; comparisons based on Dunnett's test

** based on historical data for bobwhite reproduction, this value is unacceptably low for a control group

14. **REVIEWER'S COMMENTS:** The mortalities observed suggest that conditions for chicks, and possibly adults, may have been inadequate in this study. The percentage of 14-day-old survivors of the number of hatchlings (55%) was unacceptably low in the control group. EFED examined historical records (1978-1993) for 110 bobwhite reproduction studies and found the mean percentage of 14-day-old survivors of the number of hatchlings to be 88%, with a range from 65 to 100%. The reasons for the high chick mortality in this study are unclear. EFED also questions why adult mortality occurred in 21% (15/72) of the replicates in the study. Five adults died in the 18 control pairs, as well as three to four adults in each of the three treatment groups. The study authors deemed these deaths unrelated to treatment.

A further complication of this study was that significant adverse effects were found at 50 ppm and at 200 ppm but not at 800 ppm. However, despite the lack of a dose-dependant response at 800 ppm, the results suggest that the chemical had some adverse effect on reproduction. Because there was a significant effect at the lowest dosage, an NOEC was not established for the most sensitive measurement endpoint.

OBS	LEVEL	EC	ES	VE	LE	NH	HS	THICK	HATWT
1	CONTROL	59	0	53	31	30	14	0.186	6.9
2	CONTROL	64	2	57	56	52	14	0.203	7.0
3	CONTROL	62	0	55	55	25	0.198	7.0	
4	CONTROL	40	0	36	33	27	16	0.196	5.2
5	CONTROL	41	5	32	30	29	15	0.192	6.6
6	CONTROL	52	1	46	44	39	18	0.183	7.5
7	CONTROL	54	2	47	46	44	28	0.197	6.9
8	CONTROL	41	4	32	32	29	14	0.189	6.7
9	CONTROL	57	5	47	41	38	16	0.193	6.2
10	CONTROL	25	3	20	19	17	10	0.178	6.4
11	CONTROL	55	0	50	48	46	18	0.222	6.5
12	CONTROL	55	0	50	49	49	47	0.191	6.5
13	CONTROL	63	2	55	55	52	31	0.214	6.9
14	TRT1	38	0	33	13	13	12	4	0.206
15	TRT1	53	2	47	44	42	15	0.193	6.5
16	TRT1	30	1	24	23	17	15	0.207	7.5
17	TRT1	50	0	45	44	37	16	0.199	7.2
18	TRT1	28	2	21	20	12	10	0.098	6.6
19	TRT1	30	3	21	20	19	19	0.192	7.7
20	TRT1	32	2	27	27	25	22	13	0.189
21	TRT1	19	3	13	9	8	5	0.198	6.3
22	TRT1	40	3	33	27	27	24	12	0.213
23	TRT1	63	1	56	53	51	47	0.194	6.7
24	TRT1	55	3	47	45	44	39	0.178	6.9
25	TRT1	41	0	37	32	31	29	16	0.192
26	TRT1	38	1	32	15	15	14	5	0.196
27	TRT1	35	6	25	23	22	18	8	0.189
28	TRT1	35	4	27	21	16	7	0.200	6.1
29	TRT2	25	1	20	14	12	11	5	0.214
30	TRT2	43	0	38	37	35	33	17	0.196

OBS	LEVEL	EC	ES	VE	LE	NH	HS	THICK	HATWT
1	CONTROL	59	0	53	31	30	14	0.186	6.9
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9	CONTROL	57	5	47	41	38	16	0.193	6.2
10	CONTROL	25	3	20	19	17	10	0.178	6.4
11	CONTROL	55	0	50	48	46	18	0.222	6.5
12	CONTROL	55	0	50	49	49	47	0.191	6.5
13	CONTROL	63	2	55	55	52	31	0.214	6.9
14	TRT1	38	0	33	13	13	12	4	0.206
15	TRT1	53	2	47	44	42	15	0.193	6.5
16	TRT1	30	1	24	23	17	15	0.207	7.5
17	TRT1	50	0	45	44	37	16	0.199	7.2
18	TRT1	28	2	21	20	12	10	0.098	6.6
19	TRT1	30	3	21	20	19	19	0.192	7.7
20	TRT1	32	2	27	27	25	22	13	0.189
21	TRT1	19	3	13	9	8	5	0.198	6.3
22	TRT1	40	3	33	27	27	24	12	0.213
23	TRT1	63	1	56	53	51	47	0.194	6.7
24	TRT1	55	3	47	45	44	39	0.178	6.9
25	TRT1	41	0	37	32	31	29	16	0.192
26	TRT1	38	1	32	15	15	14	5	0.196
27	TRT1	35	6	25	23	22	18	8	0.189
28	TRT1	35	4	27	21	16	7	0.200	6.1
29	TRT2	25	1	20	14	12	11	5	0.214
30	TRT2	43	0	38	37	35	33	17	0.196

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
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LEVEL

CONTROL

TRT1

TRT2

TRT3

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
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LEVEL

CONTROL

TRT1

TRT2

TRT3

LEVEL Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT3 - CONTROL	-14.858	-7.594	-0.329 ***
TRT1 - CONTROL	-17.176	-10.028	-2.881 ***
TRT2 - CONTROL	-17.750	-10.485	-3.220 ***

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

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General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 57

NOTE: Due to missing values, only 56 observations can be used in this analysis.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

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General Linear Models Procedure
Type I Estimable Functions for: LEVEL

Coefficients

0

LEVEL	CONTROL	L2	L3	L4	-L2-L3-L4
TRT1					
TRT2					
TRT3					

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

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General Linear Models Procedure

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	131.72759	43.90920	0.60	0.6194
Error	52	3820.14260	73.46428		
Corrected Total	55	3951.87019			

R-Square C.V. Root MSE RESPONSE Mean

0.033333 18.69851 8.5711 45.839

Dependent Variable: RESPONSE

General Linear Models Procedure

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General Linear Models Procedure
Least Squares Means

LEVEL	RESPONSE LSMEAN	Pr > T NO: LSMEAN(i)=LSMEAN(j)
CONTROL	47.9003076	1
TRT1	43.6426398	2 0.1956 0.5163 0.6455
TRT2	45.729592	3 0.5125 0.3953 0.8466
TRT3	46.3727506	4 0.6455 0.3953 0.8466

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

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General Linear Models Procedure

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 52 MSE= 73.46428-
Critical Value of Studentized Range= 3.753

Comparisons significant at the 0.05 level are indicated by ***.

LEVEL Comparison	Simultaneous Lower Confidence Limit	Simultaneous Upper Confidence Limit
CONTROL - TRT3	-7.234	1.528
CONTROL - TRT2	-6.605	1.517
CONTROL - TRT1	-4.362	4.258
TRT3 - CONTROL	-10.290	-1.528
TRT3 - TRT2	-7.938	0.630
TRT3 - TRT1	-5.723	2.730
TRT2 - CONTROL	-10.919	-2.157
TRT2 - TRT3	-9.228	-0.630
TRT2 - TRT1	-6.353	2.101
TRT1 - CONTROL	-12.878	-4.258
TRT1 - TRT3	-11.084	-2.300
TRT1 - TRT2	-10.554	-2.101

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

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General Linear Models Procedure

	MEAN	MEAN	MEAN	MEAN
EL	51.38	39.13	28.87	42.64
EC	1.85	2.20	1.07	2.07
ES	44.77	32.53	24.00	36.57
VE	41.54	27.80	21.33	34.07
LE	41.00	26.53	20.27	32.50
NH	38.23	23.60	17.47	27.93
HS	21.08	11.33	8.67	15.43
ES/EL (%)	86.46	81.55	78.03	81.55
(EL-EC)/EL (%)	95.80	93.42	94.43	92.49
VE/ES (%)	93.10	84.26	89.04	93.31
LE/VE (%)	98.48	95.16	95.09	95.04
NH/EL (%)	73.78	57.44	56.52	61.42
NH/ES (%)	85.43	70.19	73.52	75.93
NH/LE (%)	93.25	88.34	86.48	85.05
HS/ES (%)	47.13	33.60	38.27	41.12
HS/NH (%)	54.98	47.71	51.13	52.56
THICK	0.19	0.20	0.19	0.19
HATWT	6.64	6.60	6.61	6.31
SURWT	25.29	25.03	28.29	25.00
FOOD	434.32	430.01	432.36	428.98
POSTM	207.65	199.75	213.92	206.35
POSTF	232.35	232.87	207.03	224.14

Variable	Label	N	Mean	Std Dev	CV
EL		13	51.385	11.442	22.268
EC		13	44.766	11.908	25.421
ES		13	41.358	11.515	27.722
VE		13	41.000	11.597	28.286
LE		13	38.231	11.039	28.875
NH		13	21.077	7.522	35.687
HS		13	0.195	0.010	5.357
THICK		13	6.638	0.545	8.217
HATWT		13	25.292	2.010	7.946
SURWT		13	454.323	41.552	9.146
FOOD		13	193.838	8.423	4.345
PREM		13	207.654	16.380	7.888
POSTM		13	193.485	14.052	7.262
PREF		13	232.354	26.000	11.190
POSTF		13			

Variable	Label	N	Mean	Std Dev	CV
EL		15	28.867	1.067	3.729
EC		15	24.000	1.085	4.483
ES		15	21.333	1.022	6.659
VE		15	20.267	1.493	6.578
LE		15	17.467	1.999	6.868
NH		15	8.667	0.191	4.982
HS		14	6.607	0.300	4.539
THICK		14	28.286	3.804	13.449
HATWT		14	432.360	42.505	9.831
SURWT		15	195.387	8.320	4.258
FOOD		15	213.920	11.555	5.401
PREM		15	187.133	16.247	8.682
POSTM		15	207.033	30.155	14.565
POSTF		14	78.029	17.892	22.930
ES/EL (%)		14	56.520	17.943	31.746
NH/EL (%)		14	94.427	12.026	12.736
ENC.EL.		14	89.035	12.446	13.979
VE/ES (%)		14	73.518	23.353	17.169
NH/ES (%)		14			

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ES/EL (%) NH/EL (%) NH/ES (%) VE/ES (%) VE/ES (%) NH/ES (%) HS/ES (%) LE/VE (%) NH/LE (%) HS/NH (%)

ENC.EL. (EL-EC)/EL (%) (EL-EC)/EL (%)

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EL		15	28.867	1.067	3.729
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FOOD		15	213.920	11.555	5.401
PREM		15	187.133	16.247	8.682
POSTM		15	207.033	30.155	14.565
POSTF		14	78.029	17.892	22.930
ES/EL (%) NH/EL (%) NH/ES (%) VE/ES (%) VE/ES (%) NH/ES (%) HS/ES (%) LE/VE (%) NH/LE (%) HS/NH (%)		14	56.520	17.943	31.746
ENC.EL. (EL-EC)/EL (%)		14	94.427	12.026	12.736
VE/ES (%) NH/ES (%) HS/ES (%) LE/VE (%) NH/LE (%) HS/NH (%)		14	89.035	12.446	13.979
NH/ES (%)		14	73.518	23.353	17.169

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ES/EL (%) NH/EL (%) NH/ES (%) VE/ES (%) VE/ES (%) NH/ES (%) HS/ES (%) LE/VE (%) NH/LE (%) HS/NH (%)

ENC.EL. (EL-EC)/EL (%) (EL-EC)/EL (%)

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EL		15	28.867	1.067	3.729
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NH		15	8.667	0.191	4.982
HS		14	6.607	0.300	4.539
THICK		14	28.286	3.804	13.449
HATWT		14	432.360	42.505	9.831
SURWT		15	195.387	8.320	4.258
FOOD		15	213.920	11.555	5.401
PREM		15	187.133	16.247	8.682
POSTM		15	207.033	30.155	14.565
POSTF		14	78.029	17.892	22.930
ES/EL (%) NH/EL (%) NH/ES (%) VE/ES (%) VE/ES (%) NH/ES (%) HS/ES (%) LE/VE (%) NH/LE (%) HS/NH (%)		14	56.520	17.943	31.746
ENC.EL. (EL-EC)/EL (%)		14	94.427	12.026	12.736
VE/ES (%) NH/ES (%) HS/ES (%) LE/VE (%) NH/LE (%) HS/NH (%)		14	89.035	12.446	13.979
NH/ES (%)		14	73.518	23.353	17.169

File: a:\4015601.out Page 5
 HS ES HS/ES (%) 14 38.269 16.232 42.414
 LE VE LE/VE (%) 14 95.087 4.177 4.393
 NH ES NH/ES (%) 14 86.475 12.237 14.151
 HS NH HS/NH (%) 14 51.128 15.856 31.012

LEVEL=TRT3

Variable	Label	N	Mean	Std Dev	CV
EL		14	42.643	20.387	47.809
EC		14	2.071	2.093	101.024
ES		14	36.571	19.326	52.845
VE		14	34.071	18.040	52.949
LE		14	32.500	17.862	54.959
NH		14	27.929	17.420	62.373
HS		14	15.429	12.470	80.822
THICK		14	0.187	0.017	9.328
HATWT		14	6.314	0.552	8.738
SURVWT		14	25.000	3.668	14.673
FOOD		14	428.979	26.868	6.263
PREN		14	190.879	7.349	3.850
POSTM		14	206.350	18.322	8.879
PREF		14	193.471	10.316	5.332
POSTF		14	224.443	33.694	15.032
ES/EL	ES/EL (%)	14	81.552	11.532	14.140
NH/EL	NH/EL (%)	14	61.621	13.945	22.704
EN/EL	(EL-EC)/EL (%)	14	92.491	7.844	8.678
VE/ES	VE/ES (%)	14	93.512	3.601	3.859
NH/ES	NH/ES (%)	14	75.927	15.417	20.305
NH/ES	NH/ES (%)	14	41.119	15.947	38.783
LE/VE	LE/VE (%)	14	95.039	7.338	7.721
NH/LE	NH/LE (%)	14	85.054	12.544	14.748
HS/NH	HS/NH (%)	14	52.563	17.330	32.969

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 1. ANALYSIS OF EGGS LAID

09:19 Thursday, June 27, 1996

General Linear Models Procedure
 Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 57

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 1. ANALYSIS OF EGGS LAID

09:19 Thursday, June 27, 1996

General Linear Models Procedure
 Type I Estimable Functions for: LEVEL
 Coefficients

Effect INTERCEPT 0

LEVEL	CONTROL	TRT1	TRT2	TRT3
	L2	L3	L4	L2-L3-L4

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 METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 1. ANALYSIS OF EGGS LAID

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Dependent Variable: EL		Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model							
Error			53	12401.7579	233.9954		
Corrected Total			56	16054.5614			

Least Squares Means		LEVEL	EL	Pr > T	LSMEAN(i)=LSMEAN(j)	i/j	3
		CONTROL	51.3846154	1	0.0393	0.0003	0.1438
		TRT1	39.1333333	2	0.0393	0.0717	0.5396
		TRT2	28.8666667	3	0.0003	0.0717	0.0188
		TRT3	42.6428571	4	0.1438	0.5396	0.0188

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 1. ANALYSIS OF EGGS LAID

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Studentized Range (HSD) Test for variable: EL		LEVEL	EL	Pr > T	LSMEAN(i)=LSMEAN(j)	i/j	3
		CONTROL	51.3846154	1	0.0393	0.0003	0.1438
		TRT1	39.1333333	2	0.0393	0.0717	0.5396
		TRT2	28.8666667	3	0.0003	0.0717	0.0188
		TRT3	42.6428571	4	0.1438	0.5396	0.0188

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 53 MSE= 233.9954
 Critical Value of Studentized Range= 3.751

Comparisons significant at the 0.05 level are indicated by ***.
 Simultaneous Lower Difference Upper
 LEVEL Comparison Between Means Confidence Limit
 Comparison

CONTROL - TRT3 -6.886 8.742 24.369
 CONTROL - TRT1 -3.123 12.251 27.626 ***
 CONTROL - TRT2 7.143 22.518 37.892 ***

TRT3 - CONTROL -24.369 -8.742 6.886
 TRT3 - TRT1 -11.568 3.510 18.587
 TRT3 - TRT2 -1.301 13.776 28.054

TRT1 - CONTROL -27.626 -12.251 3.123
 TRT1 - TRT3 -18.587 3.510 11.568
 TRT1 - TRT2 -4.549 10.267 25.082

TRT2 - CONTROL -37.892 -22.518 -7.143 ***
 TRT2 - TRT3 -28.854 -13.776 1.301 ***
 TRT2 - TRT1 -25.082 -10.267 4.549

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 1. ANALYSIS OF EGGS LAID

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Dunnert's One-tailed T tests for variable: EL

NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 53 MSE= 233.9954
 Critical Value of Dunnert's T= 2.102

Comparisons significant at the 0.05 level are indicated by ***.

LEVEL	Comparison	Simultaneous Lower Difference	Upper Confidence Limit	Means
TRT3	- CONTROL	-21.126	-8.742	3.642 ***
TRT1	- CONTROL	-24.455	-12.251	-0.068 ***
TRT2	- CONTROL	-34.702	-22.518	-10.334 ***

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 2. ANALYSIS OF EGGS CRACKED

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 57

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 2. ANALYSIS OF EGGS CRACKED

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Type I Estimable Functions for: LEVEL
 Coefficients

INTERCEPT 0

LEVEL	CONTROL	L2
TRT1	TRT1	L3
TRT2	TRT2	L4
TRT3	TRT3	L2-L3-L4

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 2. ANALYSIS OF EGGS CRACKED

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Dependent Variable: EC

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	11.519472	3.839824	1.09	0.3596
Error	53	185.954212	3.508570		

Corrected Total 56 197.473884

Source	DF	R-Square	C.V.	Root MSE	EC Mean
0.058334	104.6742	1.8731		1.7895	

General Linear Models Procedure

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	11.519472	3.839824	1.09	0.3596

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 2. ANALYSIS OF EGGS CRACKED

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Least Squares Means

LEVEL	EC	Pr > T H0: LSMEAN(i)=LSMEAN(j)
LSMEAN	i/j	2 3 4

CONTROL	1.84615385	1	0.2771	0.7561
TRT1	2.20000000	2	0.6202	0.1034
TRT2	1.06666667	3	0.2771	0.8542
TRT3	2.07142857	4	0.7561	0.1548

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 2. ANALYSIS OF EGGS CRACKED

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: EC

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 53 MSE= 3.50857
 Critical Value of Studentized Range= 3.751

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 2. ANALYSIS OF EGGS CRACKED

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: EC

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 53 MSE= 3.50857
 Critical Value of Studentized Range= 3.751

Comparisons significant at the 0.05 level are indicated by ****.

LEVEL Comparison	Simultaneous Lower Confidence Limit	Simultaneous Upper Confidence Limit	Difference Between Means	Confidence Limit
TRT1 - TRT3	-1.7177	0.1286	1.9748	
TRT1 - CONTROL	-1.5288	0.3538	2.2365	
TRT1 - TRT2	-0.6808	1.1333	2.9475	
TRT3 - TRT1	1.9748	-0.1286	1.7177	
TRT3 - CONTROL	-1.6883	0.2253	2.1389	
TRT3 - TRT2	-0.8415	1.0048	2.8510	
CONTROL - TRT1	-2.2365	-0.3538	1.5288	
CONTROL - TRT3	-2.1389	-0.2253	1.6883	
CONTROL - TRT2	-1.1031	0.7795	2.6621	
TRT2 - TRT1	-2.9475	-1.1333	0.6808	
TRT2 - TRT3	-2.8510	-1.0048	0.8415	
TRT2 - CONTROL	-2.6621	-0.7795	1.1031	

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
2. ANALYSIS OF EGGS CRACKED

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Dunnert's One-tailed T tests for variable: EC

NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 53 MSE= 3.50857
Critical Value of Dunnett's T= 2.102

Comparisons significant at the 0.05 level are indicated by ****.

LEVEL Comparison	Simultaneous Lower Confidence Limit	Simultaneous Upper Confidence Limit	Difference Between Means	Confidence Limit
TRT1 - CONTROL	-1.1380	0.3538	1.8457	
TRT1 - CONTROL	-1.2912	0.2253	1.7417	
TRT2 - CONTROL	-2.2714	-0.7795	0.7126	

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
3. ANALYSIS OF EGGS SET

09:19 Thursday, June 27, 1996

General Linear Models Procedure
Class Level Information

Class Levels Values

LEVEL 4 CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 57

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
3. ANALYSIS OF EGGS SET

09:19 Thursday, June 27, 1996

General Linear Models Procedure
Type I Estimable Functions for: LEVEL

Effect INTERCEPT

Coefficients 0

LEVEL CONTROL L2

TRT1 L3

TRT2 L4

TRT3 -L2-L3-L4

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE

3. ANALYSIS OF EGGS SET

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Dependent Variable: ES

Source DF

Model 3

Error 53

Corrected Total 56

R-Square 0.213198

C.V. 43.34676

Root MSE 14.7688

ES Mean 0.213198

Pr > F 4.79

0.0050

Source DF

LEVEL 3

Model 3132.2497

Error 1044.0832

Corrected Total 11559.4696

R-Square 218.1032

C.V. 14691.7193

Root MSE 43.34676

ES Mean 14.7688

Pr > F 34.070

Source DF

LEVEL 3

Model 3132.2497

Error 1044.0832

Corrected Total 11559.4696

R-Square 218.1032

C.V. 14691.7193

Root MSE 43.34676

ES Mean 14.7688

Pr > F 4.79

0.0050

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE

3. ANALYSIS OF EGGS SET

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Least Squares Means

LEVEL ES Pr > |T| H0: LSMEAN(i)=LSMEAN(j)

i/j 1 2 3

CONTROL 44.7622308 1 0.0332 0.0005 0.1554

TRT1 32.5333333 2 0.0332 0.1195 0.4651

TRT2 24.0000000 3 0.0005 0.1195 0.0260

TRT3 36.5714286 4 0.1554 0.4451 0.0260

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE

3. ANALYSIS OF EGGS SET

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: ES
 NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 53 MSE= 218.1032
 Critical Value of Studentized Range= 3.751

Comparisons significant at the 0.05 level are indicated by '***'.

Simultaneous

LEVEL Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
CONTROL - TRT3	-6.890	8.198	23.285
CONTROL - TRT1	-2.607	12.236	27.079
CONTROL - TRT2	5.926	20.769	35.613 ***

LEVEL Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT3 - CONTROL	-23.285	-8.198	6.890
TRT3 - TRT1	-10.518	4.038	18.595
TRT3 - TRT2	-1.985	12.571	27.128

LEVEL Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT1 - CONTROL	-27.079	-12.236	2.607
TRT1 - TRT3	-18.595	-4.038	10.518
TRT1 - TRT2	-5.770	8.533	22.837

LEVEL Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT2 - CONTROL	-35.613	-20.769	-5.926 ***
TRT2 - TRT3	-27.128	-12.571	1.985
TRT2 - TRT1	-22.837	-8.533	5.770

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE

3. ANALYSIS OF EGGS SET

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Dunnett's One-tailed T tests for variable: ES

NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 53 MSE= 218.1032
 Critical Value of Dunnett's T= 2.102

Comparisons significant at the 0.05 level are indicated by '***'.

Simultaneous

LEVEL Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT3 - CONTROL	-20.154	8.198	3.758 ***
TRT1 - CONTROL	-23.998	-12.236	-0.473 ***
TRT2 - CONTROL	-32.332	-20.769	-9.007 ***

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE

4. ANALYSIS OF Viable EMBRYOS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Class Level Information

Class	Levels	Values
LEVEL	1	CONTROL
LEVEL	2	TRT1
LEVEL	3	TRT2
LEVEL	4	TRT3

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Class Level Information

Class	Levels	Values
LEVEL	1	LSMEAN
LEVEL	2	H0: LSMEAN(i)=LSMEAN(j)
LEVEL	3	Pr > T
LEVEL	4	Pr > T / j

NOTE: To ensure overall protection level, only probabilities associated

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 4. ANALYSIS OF Viable EMBRYOS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Type I Estimable Functions for: LEVEL

Effect	Coefficients
INTERCEPT	0

LEVEL	CONTROL	L2
TRT1	TRT1	L3
TRT2	TRT2	L4
TRT3	TRT3	-L2-L3-L4

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 4. ANALYSIS OF Viable EMBRYOS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Dependent Variable: YE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
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Model	DF	R-Square	C.V.	Root MSE	VE Mean
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Error	DF	53	11057.8927	208.6395	
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Corrected Total	56	14186.0351			
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Source	DF	Type I SS	Mean Square	F Value	Pr > F
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LEVEL	3	3128.1424	1042.7141	5.00	0.0040
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METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 4. ANALYSIS OF Viable EMBRYOS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Least Squares Means

LEVEL	LSMEAN	Pr > T
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LEVEL	1	1
-------	---	---

LEVEL	2	2
-------	---	---

LEVEL	3	3
-------	---	---

LEVEL	4	4
-------	---	---

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
4. ANALYSIS OF Viable EMBRYOS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: VE

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 53 MSE= 208.6395
Critical Value of Studentized Range= 3.755

Comparisons significant at the 0.05 level are indicated by ***.

LEVEL Comparison	Simultaneous Lower Confidence Limit	Simultaneous Upper Confidence Limit	
CONTROL - TRT3	-7.289	7.467	22.223
CONTROL - TRT1	-0.779	13.738	28.256
CONTROL - TRT2	5.687	20.205	34.723 ***
TRT3 - CONTROL	-22.223	-7.467	7.289
TRT3 - TRT1	-7.966	6.271	20.509
TRT3 - TRT2	-1.499	12.738	26.975
TRT1 - CONTROL	-28.256	-13.738	0.779
TRT1 - TRT3	-20.509	-6.271	7.966
TRT1 - TRT2	-7.523	6.467	20.456
TRT2 - CONTROL	-34.723	-20.205	-5.687 ***
TRT2 - TRT3	-26.975	-12.738	1.499
TRT2 - TRT1	-20.456	-6.467	7.523

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
4. ANALYSIS OF Viable EMBRYOS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Dunnett's One-tailed T tests for variable: VE

NOTE: This test controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 53 MSE= 208.6395
Critical Value of Dunnett's T= 2.102

Comparisons significant at the 0.05 level are indicated by ***.

LEVEL Comparison	Simultaneous Lower Confidence Limit	Simultaneous Upper Confidence Limit	
TRT3 - CONTROL	-19.161	-7.467	4.227
TRT1 - CONTROL	-25.243	-13.738	-2.234 ***
TRT2 - CONTROL	-31.710	-20.205	-8.701 ***

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE

LEVEL

LE Pr > |T| HO : LSMEAN(i)=LSMEAN(j)

General Linear Models Procedure

Class Level Information

LEVEL 4 CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 57

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Type I Estimable Functions for: LEVEL

Coefficients

Effect	INTERCEPT	
LEVEL	CONTROL	L2 L3 L4 -L2-L3-L4
INTERCEPT	0	
LEVEL	CONTROL	L2 L3 L4 -L2-L3-L4

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Dependent Variable: LE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	3254.8158	1084.9386	5.36	0.0027
Error	53	10736.1667	202.5692		
Corrected Total	56	13990.9825			
			R-Square	C.V.	Root MSE
		0.232637	4.8.0371	14.233	29.649

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	3254.8158	1084.9386	5.36	0.0027

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Least Squares Means

File: a:\4015601.out		Page 15		LSMEAN		i/j		1		2		3		4		Page 16		Limit		Means		Limit	
CONTROL	41.000000	1	.00097	0.0003	0.1270	TRT3	-	CONTROL	-	0.022	-8.500	-3.022	3.022	3.022	TRT1	-	CONTROL	-25.803	-14.467	-3.131	***		
TRT1	26.533333	2	.00097	0.2332	0.2643	TRT1	-	CONTROL	-	.069	-20.733	-9.397	-9.397	-9.397	TRT2	-	CONTROL	-32.069	-20.733	-9.397	***		
TRT2	20.266667	3	.00093	0.2332	0.0246	TRT2	-	CONTROL	-	.069	-20.733	-9.397	-9.397	-9.397	TRT3	-	CONTROL	-32.069	-20.733	-9.397	***		
TRT3	32.500000	4	.01270	0.2643	0.0246																		

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: LE

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 53 MSE= 202.5692
Critical Value of Studentized Range= 3.751

Comparisons significant at the 0.05 level are indicated by '****'.

Simultaneous Lower Simultaneous Upper
Level Difference Between Confidence Confidence
Comparison Confidence Limit Means Limit

LEVEL	Comparison	Lower Confidence Limit	Difference	Between Means	Upper Confidence Limit
CONTROL - TRT3	-6.040	8.500	23.040	28.772	***
CONTROL - TRT1	0.162	14.467	20.733	35.038	***
CONTROL - TRT2	6.028				
TRT3 - CONTROL	-23.040	-8.500	6.040	L2	
TRT3 - TRT1	-8.062	5.967	19.995	L3	
TRT3 - TRT2	-1.795	12.233	26.262	L4	
TRT1 - CONTROL	-28.772	-14.467	-8.162	L2-L3-L4	
TRT1 - TRT3	-19.995	-5.967	8.062		
TRT1 - TRT2	-7.518	6.267	20.051		
TRT2 - CONTROL	-35.038	-20.733	-6.428		
TRT2 - TRT3	-26.062	-12.233	1.795		
TRT2 - TRT1	-20.051	-6.267	7.518		

Number of observations in data set = 57

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
6. ANALYSIS OF NORMAL HATCHINGS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Type I Estimable Functions for: LEVEL

Effect Coefficients

LEVEL	INTERCEPT	CONTROL	TRT1	TRT2	TRT3
	0	L2	L3	L4	-L2-L3-L4

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
6. ANALYSIS OF NORMAL HATCHINGS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Dependent Variable: NH

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	3166.9392	1055.6644	5.85	0.0016
Error	53	9566.5696	180.5013		
Corrected Total	56	12733.5088			
R-Square		C.V.	Root MSE	NH Mean	
	0.248709	50.91752	13.435	26.386	

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Dunnett's One-tailed T tests for variable: LE

NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 53 MSE= 202.5692
Critical Value of Dunnett's T= 2.102

Comparisons significant at the 0.05 level are indicated by '****'.

Simultaneous Lower Simultaneous Upper
Level Difference Between Confidence Confidence

LEVEL	Comparison	Lower Confidence Limit	Difference	Between Means	Upper Confidence Limit
CONTROL - TRT3	-23.040	-8.500	6.040	28.772	***
CONTROL - TRT1	-8.062	5.967	19.995	L2	
CONTROL - TRT2	-1.795	12.233	26.262	L3	
TRT3 - CONTROL	-28.772	-14.467	-8.162	L4	
TRT3 - TRT1	-19.995	-5.967	8.062	-L2-L3-L4	
TRT3 - TRT2	-7.518	6.267	20.051		
TRT1 - CONTROL	-35.038	-20.733	-6.428		
TRT1 - TRT3	-26.062	-12.233	1.795		
TRT1 - TRT2	-20.051	-6.267	7.518		

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Least Squares Means

LEVEL	NH LSMEAN i/j	Pr > T HO: LSMEAN(i)=LSMEAN(j)
CONTROL	38.2307692	1
TRT1	23.6000000	2 0.0058 0.0002 0.0517
TRT2	17.4586867	3 0.0002 0.2167 0.3899
TRT3	27.9285714	4 0.0517 0.3899 0.0409

NOTE: To ensure overall protection level only probabilities associated with pre-planned comparisons should be used.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
6. ANALYSIS OF NORMAL HATCHLINGS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: NH

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 53 MSE= 180.5013

Critical Value of Studentized Range= 3.751

Comparisons significant at the 0.05 level are indicated by ****.

LEVEL	Comparison	Simultaneous Lower Confidence Limit	Upper Difference Between Means	Simultaneous Upper Confidence Limit
CONTROL	- TRT3	-3.423	10.302	24.028
CONTROL	- TRT1	1.128	14.631	28.134
CONTROL	- TRT2	7.261	20.764	34.267
TRT3	- CONTROL	-26.028	-10.302	3.423
TRT3	- TRT1	-8.914	4.329	17.571
TRT3	- TRT2	-2.780	10.462	23.704
TRT1	- CONTROL	-28.134	-14.631	-1.128
TRT1	- TRT3	-17.571	-4.329	8.914
TRT1	- TRT2	-6.879	6.133	19.145
TRT2	- CONTROL	-34.267	-20.764	-7.261
TRT2	- TRT3	-23.704	-10.462	2.780
TRT2	- TRT1	-19.145	-6.133	6.879

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
6. ANALYSIS OF NORMAL HATCHLINGS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

LEVEL	Comparison	INTERCEPT	0
LEVEL	CONTROL	TRT1	L2
LEVEL	TRT1	TRT2	L3
LEVEL	TRT2	TRT3	L4

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
6. ANALYSIS OF 14-DAY-OLD SURVIVORS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Dependent Variable: HS

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	1211.8589	403.9530	5.32	0.0028
Error	53	4021.0183	75.8683		
Corrected Total	56	5232.8772			
	R-Square	C.V.	Root MSE	HS Mean	
	0.231586	62.84503	8.7102	13.860	

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
6. ANALYSIS OF NORMAL HATCHLINGS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Dunnett's One-tailed T tests for variable: NH

NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.

Source	Df	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	1211.8589	403.9530	5.32	0.0028

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 7. ANALYSIS Of 14-DAY-OLD SURVIVORS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Least Squares Means

LEVEL	HS L.SMEAN	Pr > T	H0: L.SMEAN(i)=L.SMEAN(j)	i/j	1	2	3	4
CONTROL	21.0769231	1	0.0047	0.0004	0.0981			
TRT1	11.3333333	2	0.0047	0.4056	0.2113			
TRT2	8.6666667	3	0.0004	0.4056	0.0415			
TRT3	15.4285714	4	0.0981	0.2113	0.0415			

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 7. ANALYSIS Of 14-DAY-OLD SURVIVORS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: HS

NOTE: This test controls the type I experimentwise error rate.
 Alpha= 0.05 Confidence= 0.95 df= 53 MSE= 75.86827
 Critical Value of Studentized Range= 3.751

Comparisons significant at the 0.05 level are indicated by ****.

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
CONTROL - TRT3	-3.250	5.648	16.547 ***
CONTROL - TRT1	0.989	9.744	18.498 ***
CONTROL - TRT2	3.656	12.410	21.165 ***
TRT3 - CONTROL	-14.547	-5.648	3.250
TRT3 - TRT1	-4.490	4.095	12.681
TRT3 - TRT2	-1.823	6.762	15.347
TRT1 - CONTROL	-18.498	-9.744	-0.989 ***
TRT1 - TRT3	-12.681	-4.095	4.490
TRT1 - TRT2	-5.769	2.667	11.103
TRT2 - CONTROL	-21.165	-12.410	-3.656 ***
TRT2 - TRT3	-15.347	-6.762	1.823
TRT2 - TRT1	-11.103	-2.667	5.769

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 8. ANALYSIS Of EGGS SET/EGGS LAID

09:19 Thursday, June 27, 1996

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 7. ANALYSIS Of 14-DAY-OLD SURVIVORS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Dependent Variable: RESPONSE

Source DF Sum of Squares DF Mean Square F Value Pr > F

Model	3	228.29451	76.09817	1.24	0.3030
Error	52	3178.75974	61.12999		
Corrected Total	55	3407.05425			
R-square	C.V.	Root MSE	RESPONSE Mean		

Source DF Type I SS Mean Square F Value Pr > F

LEVEL 3 228.29451 76.09817 1.24 0.3030

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
8. ANALYSIS OF EGGS/SET/EGGS LAID

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Least Squares Means

LEVEL	RESPONSE LSMEAN	Pr > T H0: LSMEAN(i)=LSMEAN(j)
CONTROL	68.6663074	1
TRT1	64.9257498	2 0.2124 0.0619 0.2685
TRT2	62.9201830	3 0.4931 0.8985
TRT3	65.2981286	4 0.0619 0.4247 0.2685 0.8985 0.4247

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
8. ANALYSIS OF EGGS/SET/EGGS LAID

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 52 MSE= 61.12999
Critical Value of Studentized Range= 3.753

Comparisons significant at the 0.05 level are indicated by ****.

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
CONTROL - TRT3	-4.624	3.368	11.361
CONTROL - TRT1	-4.123	3.741	11.604
CONTROL - TRT2	-2.247	5.746	13.739

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT3 - CONTROL	-11.361	-3.368	4.624
TRT3 - TRT1	-7.339	0.372	8.084
TRT3 - TRT2	-5.465	2.378	10.221

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT1 - CONTROL	-11.604	-3.741	4.123
TRT1 - TRT3	-8.084	-0.372	7.339

TRT1 - TRT2	-5.706	2.006
TRT2 - CONTROL	-13.739	-5.746
TRT2 - TRT3	-10.221	-2.378
TRT2 - TRT1	-9.717	-2.006

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
8. ANALYSIS OF EGGS/SET/EGGS LAID

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Dunnett's One-tailed T tests for variable: RESPONSE

NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 52 MSE= 61.12999
Critical Value of Dunnett's T= 2.104

Comparisons significant at the 0.05 level are indicated by ****.

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT3 - CONTROL	-9.705	-3.368	2.969
TRT1 - CONTROL	-9.975	-3.741	2.494
TRT2 - CONTROL	-12.083	-5.746	0.591

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
9. ANALYSIS OF VISIBLE EMBRYOS/EGGS SETS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Class Level Information

Class	Level	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 57

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
9. ANALYSIS OF VISIBLE EMBRYOS/EGGS SETS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Type I Estimable Functions for: LEVEL

Effect	INTERCEPT	0
LEVEL	CONTROL	L2
	TRT1	L3
	TRT2	L4
	TRT3	-L2-L3-L4

JJ

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 9. ANALYSIS OF Viable EMBRYOS/EGGS SETS*****

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Dependent Variable: RESPONSE						
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F	
Model	3	444.36431	148.12144	1.12	0.3481	
Error	52	6855.67059	131.83982			
Corrected Total	55	7300.03490				
R-Square	C.V.	Root MSE	RESPONSE Mean			
0.060872	15.44612	11.482	74.337			
Source	DF	Type I SS	Mean Square	F Value	Pr > F	
LEVEL	3	444.36431	148.12144	1.12	0.3481	

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 9. ANALYSIS OF Viable EMBRYOS/EGGS SETS*****

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Least Squares Means						
LEVEL	RESPONSE LSMEAN	Pr > T	T	H0: LSMEAN(i)=LSMEAN(j)	4	
CONTROL	77.4594426	1	0.0916	0.5199	0.7169	
TRT1	69.980594	2	0.0916	0.2845	0.1750	
TRT2	74.594284	3	0.5199	0.2845	0.7740	
TRT3	75.8472079	4	0.7169	0.1750	0.7740	

NOTE: To ensure overall protection level only probabilities associated with pre-planned comparisons should be used.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 9. ANALYSIS OF Viable EMBRYOS/EGGS SETS*****

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: RESPONSE						
LEVEL	RESPONSE LSMEAN	Pr > T	T	H0: LSMEAN(i)=LSMEAN(j)	4	
CONTROL	77.4594426	1	0.0916	0.5199	0.7169	
TRT1	69.980594	2	0.0916	0.2845	0.1750	
TRT2	74.594284	3	0.5199	0.2845	0.7740	
TRT3	75.8472079	4	0.7169	0.1750	0.7740	

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 10. ANALYSIS OF LIVE 3-WEEK EMBRYOS/VIABLE EMBRYOS*****

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 10. ANALYSIS OF LIVE 3-WEEK EMBRYOS/VIABLE EMBRYOS*****

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

NOTE: Due to missing values, only 56 observations can be used in this analysis.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 10. ANALYSIS OF LIVE 3-WEEK EMBRYOS/VIABLE EMBRYOS*****

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Coefficients

0

INTERCEPT

LEVEL

CONTROL
TRT1
TRT2
TRT3
-L2-L3-L4METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
10. ANALYSIS OF LIVE 3-WEEK EMBRYOS/VIABLE EMBRYOS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Least Squares Means

LEVEL	RESPONSE	Pr > T HO: LSMEAN(i)=LSMEAN(j)	T	1/j	Mean	Root MSE	RESPONSE Mean	Pr > F
CONTROL	85.5814776	1	0.1911	0.0518	0.2073			
TRT1	81.2459277	2	0.1911	0.0518	0.4795	0.9785	0.4706	
TRT2	78.9598320	3	0.0518	0.4795	0.4706			
TRT3	81.3328340	4	0.2073	0.9785	0.4706			

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
10. ANALYSIS OF LIVE 3-WEEK EMBRYOS/VIABLE EMBRYOS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: RESPONSE

Tukey's Studentized Range (HSD) Test for variable: RESPONSE

Alpha= 0.05 Confidence= 0.95 df= 52 MSE= 74.61714
Critical Value of Studentized Range= 3.753

Comparisons significant at the 0.05 level are indicated by ****.

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
CONTROL - TRT3	-4.582	4.249	13.079
CONTROL - TRT1	-4.352	4.336	13.023
CONTROL - TRT2	-2.209	6.622	15.452
TRT3 - CONTROL	-13.079	-4.249	4.582
TRT3 - TRT1	-8.433	0.087	8.607
TRT3 - TRT2	-6.292	2.373	11.038

General Linear Models Procedure

Least Squares Means

LEVEL	DF	Type I SS	Mean Square	F Value	Pr > F
Model	3	305.95527	101.98509	1.37	0.26332
Error	52	3880.09102	74.61714		
Corrected Total	55	4186.04630			

General Linear Models Procedure

Least Squares Means

LEVEL	RESPONSE	Pr > T HO: LSMEAN(i)=LSMEAN(j)	T	1/j	Mean	Root MSE	RESPONSE Mean	Pr > F
CONTROL	80.5814776	1	0.1911	0.0518	0.2073			
TRT1	76.9598320	2	0.1911	0.0518	0.4795	0.9785	0.4706	
TRT2	81.3328340	3	0.0518	0.4795	0.4706			

General Linear Models Procedure

Least Squares Means

LEVEL	RESPONSE	Pr > T HO: LSMEAN(i)=LSMEAN(j)	T	1/j	Mean	Root MSE	RESPONSE Mean	Pr > F
CONTROL	85.5814776	1	0.1911	0.0518	0.2073			
TRT1	81.2459277	2	0.1911	0.0518	0.4795	0.9785	0.4706	
TRT2	78.9598320	3	0.0518	0.4795	0.4706			
TRT3	81.3328340	4	0.2073	0.9785	0.4706			

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
11. ANALYSIS OF NORMAL HATCHINGS/3-WEEK LIVE EMBRYOS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

NOTE: Due to missing values, only 56 observations can be used in this analysis.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE 11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

09:19 Thursday, June 27, 1996

General Linear Models Procedure Type I Estimable Functions for: LEVEL

Effect	Coefficients
INTERCEPT	0

LEVEL	CONTROL	L2	L3	L4	-L2-L3-L4
TRT1					
TRT2					
TRT3					

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE 11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

09:19 Thursday, June 27, 1996

General Linear Models Procedure Least Squares Means

LEVEL	RESPONSE	Pr > T ₁	H0: LSMEAN(i)=LSMEAN(j)	i/j	2	3	4
CONTROL	76.056206	1	0.2422	0.1803	0.0722		
TRT1	71.723544	2	0.2422	0.8411	0.4897		
TRT2	70.999160	3	0.1803	0.8411	0.6290		
TRT3	69.2243632	4	0.0722	0.4897	0.6290		

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE 11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

09:19 Thursday, June 27, 1996

General Linear Models Procedure Type I Error Probabilities

LEVEL	DF	Type I SS	Mean Square	F Value	Pr > F
TRT1	3	336.58498	112.19499	1.20	0.3187

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE 11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

09:19 Thursday, June 27, 1996

General Linear Models Procedure Type I Error Probabilities

LEVEL	DF	Type I SS	Mean Square	F Value	Pr > F
TRT1	3	336.58498	112.19499	1.20	0.3187

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE 11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

09:19 Thursday, June 27, 1996

General Linear Models Procedure Type I Error Probabilities

LEVEL	DF	Type I SS	Mean Square	F Value	Pr > F
TRT1	3	336.58498	112.19499	1.20	0.3187

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE 11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

09:19 Thursday, June 27, 1996

General Linear Models Procedure Type I Error Probabilities

LEVEL	DF	Type I SS	Mean Square	F Value	Pr > F
TRT1	3	336.58498	112.19499	1.20	0.3187

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE 11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

09:19 Thursday, June 27, 1996

General Linear Models Procedure Type I Error Probabilities

LEVEL	DF	Type I SS	Mean Square	F Value	Pr > F
TRT1	3	336.58498	112.19499	1.20	0.3187

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE 11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

NOTE: Tukey's Studentized Range (HSD) Test for variable: RESPONSE
NOTE: This test controls the type I experimentwise error rate.
Alpha= 0.05 Confidence= 0.95 df= 52 MSE= 93.43144
Critical Value of Studentized Range= 3.753

Comparisons significant at the 0.05 level are indicated by ***.
Simultaneous Lower Difference Upper Confidence Between Means Confidence Limit

LEVEL	Comparison	Control	Trt1	Trt2	Trt3
Control	Control	-	-5.388	4.333	14.054
Control	Trt1	-4.825	-	5.057	14.938
Control	Trt2	-3.049	6.832	-	16.713
Control	Trt3	-	7.921	1.775	11.472
Trt1	Control	-14.054	-	-6.333	5.388
Trt1	Trt2	-8.810	-	0.724	10.257
Trt1	Trt3	-7.034	2.499	-	12.033
Trt2	Control	-14.938	-	-5.057	4.825
Trt2	Trt1	-10.257	-	-0.724	8.810
Trt2	Trt3	-7.921	1.775	-	11.472
Trt3	Control	-16.713	-	-6.832	3.049
Trt3	Trt1	-12.033	-	-2.499	7.034
Trt3	Trt2	-11.472	-	-1.775	7.921

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE 11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

09:19 Thursday, June 27, 1996

General Linear Models Procedure
Dunnett's One-tailed T tests for variable: RESPONSE

NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.
Alpha= 0.05 Confidence= 0.95 df= 52 MSE= 93.43144
Critical Value of Dunnett's 1= 2.104

Comparisons significant at the 0.05 level are indicated by ***.
Simultaneous Lower Difference Upper Confidence Between Means Confidence Limit

LEVEL	Comparison	Control	Trt1	Trt2	Trt3
Control	Control	-	-12.041	-4.333	3.375
Control	Trt1	-12.891	-	-5.057	2.778
Control	Trt2	-14.666	-	-6.832	1.002

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE 12. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

09:19 Thursday, June 27, 1996

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 57

NOTE: Due to missing values, only 56 observations can be used in this analysis.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
12. ANALYSIS OF NORMAL HATCHINGS/EGGS LAID

09:19 Thursday, June 27, 1996

General Linear Models Procedure
Type I Estimable Functions for: LEVEL

Coefficients

0

INTERCEPT	LEVEL	CONTROL	L2	L3	L4	-L2-L3-L4
	LEVEL	CONTROL	TRT1	TRT2	TRT3	-L2-L3-L4
	TRT1					
	TRT2					
	TRT3					

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
12. ANALYSIS OF NORMAL HATCHINGS/EGGS LAID

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Dependent Variable: RESPONSE	Source	DF	Sum of Squares	Mean Square	F Value	Pr > F	Root MSE	RESPONSE Mean	Pr > F
Model	3	947.14754	315.71585	3.93	0.0133				
Error	52	4177.70834	80.34054						
Corrected Total	55	5124.85587							
R-Square		C.V.							
0.184814	3	17.14809	8.9633				52.270		

Source	DF	Type I SS	Mean Square	F Value	Pr > F	Root MSE	RESPONSE Mean	Pr > F
LEVEL	3	947.14754	315.71585	3.93	0.0133			

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
12. ANALYSIS OF NORMAL HATCHINGS/EGGS LAID

09:19 Thursday, June 27, 1996

General Linear Models Procedure
Least Squares Means

LEVEL	RESPONSE LSMEAN	Pr > T	H0: LSMEAN(i)=LSMEAN(j)
CONTROL	59.4756738	1	0.0047
TRT1	49.4474899	2	0.0047
TRT2	48.9906326	3	0.8914
TRT3	51.8820551	4	0.0323

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
12. ANALYSIS OF NORMAL HATCHINGS/EGGS LAID

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate.
Alpha= 0.05 Confidence= 0.95 df= 52 MSE= 80.34054

Critical Value of Studentized Range= 3.753

Comparisons significant at the 0.05 level are indicated by ***.

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
CONTROL - TRT3	-1.569	7.594	16.756
CONTROL - TRT1	1.014	10.028	19.043
CONTROL - TRT2	1.322	10.485	19.648
TRT3 - CONTROL	-16.756	-7.594	1.569
TRT3 - TRT1	-6.406	-2.435	11.275
TRT3 - TRT2	-6.100	-2.891	11.883

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
12. ANALYSIS OF NORMAL HATCHINGS/EGGS LAID

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Dunnett's One-tailed T tests for variable: RESPONSE

NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 52 MSE= 80.34054
Critical Value of Dunnett's T= 2.104

Comparisons significant at the 0.05 level are indicated by ***.

Simultaneous

Dunnert's One-tailed T tests for variable: RESPONSE
 NOTE: This tests controls the type I experimentwise error for
 comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 52 MSE= 73.46428
 Critical Value of Dunnett's T= 2.104

Comparisons significant at the 0.05 level are indicated by ***.

LEVEL	Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT3	- CONTROL	-8.475	-1.528	5.419
TRT2	- CONTROL	-9.104	-2.157	4.790
TRT1	- CONTROL	-11.092	-4.258	2.577

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID

09:19 Thursday, June 27, 1996
 General Linear Models Procedure
 Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 57

NOTE: Due to missing values, only 56 observations can be used in this analysis.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID

09:19 Thursday, June 27, 1996

General Linear Models Procedure
 Type I Estimable Functions for: LEVEL

Effect
 INTERCEPT
 0

LEVEL	CONTROL	L2	L3	L4	-L2-L3-L4
TRT3					

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Dependent Variable: RESPONSE	Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	252.55111	84.18370	0.92	0.4384	

Corrected Total	R-Square	C.V.	Root MSE	RESPONSE Mean
55	0.050330	12.11942	9.5729	78.988

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	252.55111	84.18370	0.92	0.4384

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID

09:19 Thursday, June 27, 1996
 General Linear Models Procedure
 Least Squares Means

LEVEL	RESPONSE LSMEAN	Pr > T i/j
CONTROL	81.0713352	1
TRT1	77.3422257	2
TRT2	81.2579392	3
TRT3	76.5478293	4

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID

09:19 Thursday, June 27, 1996
 General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: RESPONSE
 NOTE: This test controls the type I experimentwise error rate.
 Alpha= 0.05 Confidence= 0.95 df= 52 MSE= 91.64068
 Critical Value of Studentized Range= 3.753

Comparisons significant at the 0.05 level are indicated by ***.

LEVEL Comparison	Lower Confidence Limit	Upper Confidence Limit	Simultaneous Means
TRT2 - CONTROL	-9.599	0.187	9.973
TRT2 - TRT1	-5.526	3.916	3.729
TRT2 - TRT3	-4.893	4.710	14.313
CONTROL - TRT2	-9.973	-0.187	9.599
CONTROL - TRT1	-5.899	3.729	13.357
CONTROL - TRT3	-5.263	4.524	14.310

LEVEL Comparison	Lower Confidence Limit	Upper Confidence Limit	Simultaneous Means
TRT1 - TRT2	-13.357	-3.916	5.526
TRT1 - CONTROL	-13.357	-3.729	5.899
TRT1 - TRT3	-8.647	0.794	10.236
TRT3 - TRT2	-14.313	-4.710	4.893

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TRT3 - CONTROL -14.310 -4.524 5.263

TRT1 - TRT1 -0.794 8.647

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID

*****09:19 Thursday, June 27, 1996

General Linear Models Procedure

Burnett's One-tailed T tests for variable: RESPONSE
NOTE: This tests controls the type I experimentwise error for
comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 52 MSE= 91.64068
Critical Value of Burnett's T= 2.104

Comparisons significant at the 0.05 level are indicated by ***.

LEVEL	Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT2	- CONTROL	-7.572	0.187	7.946
TRT1	- CONTROL	-11.363	-3.729	3.904
TRT3	- CONTROL	-12.282	-4.524	3.235

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET

*****09:19 Thursday, June 27, 1996

General Linear Models Procedure

Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 57

NOTE: Due to missing values, only 56 observations can be used in this analysis.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET

*****09:19 Thursday, June 27, 1996

General Linear Models Procedure

Type I Estimable Functions For: LEVEL

Coefficients

0

Effect INTERCEPT LEVEL CONTROL TRT1 L2 TRT2 L3 TRT3 L4 -L2-L3-L4

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET

*****09:19 Thursday, June 27, 1996

General Linear Models Procedure

Dependent Variable: RESPONSE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	810.60110	270.20037	1.99	0.1262
Error	52	7043.62046	135.45424		
Corrected Total	55	7854.22156			

Source	DF	R-Square	C.V.	Root MSE	RESPONSE Mean
	0.103206	18.68988	11.638 .	62.272	

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	810.60110	270.20037	1.99	0.1262

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET

*****09:19 Thursday, June 27, 1996

General Linear Models Procedure

Least Squares Means

LEVEL	RESPONSE LSMEAN	Pr > T NO: LSMEAN(i)=LSMEAN(j)
CONTROL	68.3615270	1
TRT1	57.6349941	2 0.0185 0.1385 0.1778
TRT2	61.6180539	3 0.1385 0.3613 0.3613
TRT3	62.2378581	4 0.1778 0.2921 0.8885

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET

*****09:19 Thursday, June 27, 1996

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 52 MSE= 135.4542
Critical Value of Studentized Range= 3.753

Comparisons significant at the 0.05 level are indicated by ***.

LEVEL	Comparison	Simultaneous Lower Confidence Limit	Simultaneous Upper Confidence Limit
CONTROL	L2		
TRT1	L3		
TRT2	L4		
TRT3	-L2-L3-L4		

CONTROL - TRT3 -5.774 6.124
CONTROL - TRT2 -5.154 6.743 18.021

CONTROL - TRT1 -0.979 10.727 22.432
 TRT3 - CONTROL -18.021 -6.124 5.774
 TRT3 - TRT2 -11.055 0.620 12.295
 TRT3 - TRT1 -6.876 4.603 16.082
 TRT2 - CONTROL -18.641 -6.743 5.154
 TRT2 - TRT3 -12.295 -0.620 11.055
 TRT2 - TRT1 -7.496 3.983 15.462
 TRT1 - CONTROL -22.432 -10.727 0.979
 TRT1 - TRT3 -16.082 -4.603 6.876
 TRT1 - TRT2 -15.462 -3.983 7.496

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Dunnett's One-tailed T tests for variable: RESPONSE
 NOTE: This tests controls the type I experimentwise error for
 comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 52 MSE= 135.4542
 Critical Value of Dunnett's T= 2.104

Comparisons significant at the 0.05 level are indicated by ***.

LEVEL	Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT3	- CONTROL	-15.557	-6.124	3.309
TRT2	- CONTROL	-16.177	-6.743	2.690
TRT1	- CONTROL	-20.007	-10.727	-1.446

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 16. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 57

NOTE: Due to missing values, only 56 observations can be used in this analysis.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 16. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Type I Estimable Functions for: LEVEL

Alpha= 0.05 Confidence= 0.95 df= 52 MSE= 74.78182

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 16. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Comparisons significant at the 0.05 level are indicated by ****.

LEVEL Comparison	Simultaneous Lower Confidence Limit	Simultaneous Upper Confidence Limit
CONTROL - TRT3	-4.856	3.984
CONTROL - TRT2	-3.401	5.439
CONTROL - TRT1	-0.480	8.217
TRT3 - CONTROL	-12.824	-3.984
TRT3 - TRT2	-7.220	1.455
TRT3 - TRT1	-4.296	4.233
TRT2 - CONTROL	-14.279	-5.639
TRT2 - TRT3	-10.130	-1.555
TRT2 - TRT1	-5.751	2.778
TRT1 - CONTROL	-16.914	-8.217
TRT1 - TRT3	-12.762	-4.233
TRT1 - TRT2	-11.307	-2.778

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
16. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Dunnett's One-tailed T tests for variable: RESPONSE
NOTE: This tests controls the type I experimentwise error for
comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 52 MSE= 74.78182
Critical Value of Burnett's T= 2.104

Comparisons significant at the 0.05 level are indicated by ****.

LEVEL Comparison	Simultaneous Lower Confidence Limit	Simultaneous Upper Confidence Limit
TRT3 - CONTROL	-10.993	-3.984
TRT2 - CONTROL	-12.448	-5.439
TRT1 - CONTROL	-15.113	-8.217

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
17. ANALYSIS OF EGGSHELL THICKNESS

09:19 Thursday, June 27, 1996

General Linear Models Procedure Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 57

NOTE: Due to missing values, only 56 observations can be used in this analysis.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
17. ANALYSIS OF EGGSHELL THICKNESS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Type I Estimable Functions for: LEVEL

Coefficients

INTERCEPT 0

LEVEL CONTROL L2

TRT1 L3

TRT2 L4

TRT3 -L2-L3-L4

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
17. ANALYSIS OF EGGSHELL THICKNESS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Dependent Variable: THICK

Sum of Squares DF Mean Square F Value Pr > F

Model 3 0.0007940 0.0002647 1.82 0.1559

Error 52 0.0075820 0.0001458

Corrected Total 55 0.0083759

R-Square C.V. Root MSE THICK Mean

0.094792 6.275917 0.0121 0.1925

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
17. ANALYSIS OF EGGSHELL THICKNESS

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Least Squares Means

LEVEL	THICK LSMEAN	Pr > t HO: LSMEAN(i)=LSMEAN(j)
1	0.19476923	1
2	0.19693333	2
3	0.19078571	3
4	0.18721429	4

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
17. ANALYSIS OF EGGSHELL THICKNESS

09:19 Thursday, June 27, 1996

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: THICK

NOTE: This test controls the type I experimental error rate.

Alpha= 0.05 Confidence= 0.95 df= 52 MSE= 0.000146

Critical Value of Studentized Range= 3.753

Comparisons significant at the 0.05 level are indicated by ****.

Simultaneous
Lower Confidence Limit

Difference Between Means

Upper Confidence Limit

LEVEL	Comparison	Lower Limit	Difference	Simultaneous
TRT1	- CONTROL	-0.009980	0.002164	0.014308
TRT1	- TRT2	-0.005762	0.006148	0.018057
TRT1	- TRT3	-0.002191	0.009719	0.021629
CONTROL	- TRT1	-0.014308	-0.002164	0.009980
CONTROL	- TRT2	-0.008360	0.003984	0.016327
CONTROL	- TRT3	-0.004789	0.007555	0.019899
TRT2	- TRT1	-0.018057	-0.006148	0.005762
TRT2	- CONTROL	-0.016327	-0.003984	0.008360
TRT2	- TRT3	-0.008462	0.005371	0.015685
TRT3	- TRT1	-0.021629	-0.009719	0.002191
TRT3	- CONTROL	-0.019899	-0.007555	0.004789
TRT3	- TRT2	-0.015385	-0.005571	0.008542

Simultaneous
Lower Confidence Limit

Difference Between Means

Upper Confidence Limit

LEVEL	Comparison	Lower Limit	Difference	Simultaneous
TRT1	- CONTROL	-0.007465	0.002164	0.011793
TRT2	- CONTROL	-0.013771	-0.003984	0.005803
TRT3	- CONTROL	-0.017342	-0.007555	0.002232

Simultaneous
Lower Confidence Limit

Difference Between Means

Upper Confidence Limit

LEVEL	Comparison	Lower Limit	Difference	Simultaneous
TRT1	- CONTROL	-0.007465	0.002164	0.011793
TRT2	- CONTROL	-0.013771	-0.003984	0.005803
TRT3	- CONTROL	-0.017342	-0.007555	0.002232

Simultaneous
Lower Confidence Limit

Difference Between Means

Upper Confidence Limit

LEVEL	Comparison	Lower Limit	Difference	Simultaneous
TRT1	- CONTROL	-0.007465	0.002164	0.011793
TRT2	- CONTROL	-0.013771	-0.003984	0.005803
TRT3	- CONTROL	-0.017342	-0.007555	0.002232

LEVEL	Levels	Values
CONTROL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 57

NOTE: Due to missing values, only 56 observations can be used in this analysis.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
18. ANALYSIS OF HATCHLING WEIGHT

09:19 Thursday, June 27, 1996

Coefficients

Effect

INTERCEPT

0

LEVEL

CONTROL	L2
TRT1	L3
TRT2	L4

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
18. ANALYSIS OF HATCHLING WEIGHT

09:19 Thursday, June 27, 1996

Dependent Variable:

Source DF Sum of Squares Mean Square F Value Pr > F

Model 3 0.9563736 0.3187912 1.44 0.2405

Error 52 11.4771978 0.22207153

Corrected Total 55 12.4335714

R-Square

C.V.

Root MSE

HATWT Mean

0.076919 7.184325 0.4698 6.5393

General Linear Models Procedure

Source DF Type I SS Mean Square F Value Pr > F

LEVEL 3 0.9563736 0.3187912 1.44 0.2405

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
18. ANALYSIS OF HATCHLING WEIGHT

09:19 Thursday, June 27, 1996

LEVEL L5MEAN(i)=LSMEAN(i)= $\frac{1}{3}$ (MEAN(1)+MEAN(2)+MEAN(3))
Pr > T1 HO: L5MEAN(i)= $\frac{1}{2}$ (MEAN(1)+MEAN(2))
Pr > T1 HO: L5MEAN(i)= $\frac{1}{3}$ (MEAN(1)+MEAN(2)+MEAN(3))
Pr > T1 HO: L5MEAN(i)= $\frac{1}{2}$ (MEAN(2)+MEAN(3))

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
18. ANALYSIS OF HATCHING WEIGHT

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
18. ANALYSIS OF HATCHING WEIGHT

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: HATWT

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 52 MSE= 0.220715
Critical Value of Studentized Range= 3.753

Comparisons significant at the 0.05 level are indicated by ***.

LEVEL		Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
CONTROL	- TRT2	-0.4489	0.0313	0.5116	
CONTROL	- TRT1	-0.4340	0.0385	0.5110	
CONTROL	- TRT3	-0.1561	0.3242	0.8044	
TRT2	- CONTROL	-0.5116	-0.0313	0.4489	
TRT2	- TRT1	-0.4562	0.0071	0.4705	
TRT2	- TRT3	-0.1784	0.2929	0.7641	
TRT1	- CONTROL	-0.5110	-0.0385	0.4340	
TRT1	- TRT2	-0.4705	-0.0071	0.4562	
TRT1	- TRT3	-0.1777	0.2857	0.7491	
TRT3	- CONTROL	-0.8044	-0.3242	0.1561	
TRT3	- TRT2	-0.7641	-0.2929	0.1784	
TRT3	- TRT1	-0.7491	-0.2857	0.1777	

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
18. ANALYSIS OF HATCHING WEIGHT

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Dunnnett's One-tailed T tests for variable: HATWT

NOTE: This test controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 52 MSE= 0.220715
Critical Value of Dunnnett's T= 2.104

Comparisons significant at the 0.05 level are indicated by ***.

LEVEL		Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
CONTROL	- TRT2	-0.4489	0.0313	0.5116	
CONTROL	- TRT1	-0.4340	0.0385	0.5110	
CONTROL	- TRT3	-0.1561	0.3242	0.8044	

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Class Level Information

CLASS	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 57

NOTE: Due to missing values, only 56 observations can be used in this analysis.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Type I Estimable Functions for: LEVEL

Effect	INTERCEPT	0
LEVEL	CONTROL	L2
	TRT1	L3
	TRT2	L4
	TRT3	-L2-L3-L4

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Dependent Variable: SURVWT

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	107.09011	35.69670	3.64	0.0186
Error	52	510.27971	9.81307		

Corrected Total	55	617.36982	C.V.	Root MSE	SURVWT Mean
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Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	107.09011	35.69670	3.64	0.0186
		0.173462	12.09575	3.1326	25.898

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Least Squares Means

LEVEL	SURVAT	Pr> T	H0: LSMEAN(i)=LSMEAN(j)
	LSMEAN	i/j	2 3 4
CONTROL	25.2923077	1	0.8282 0.0164 0.8095
TRT1	25.0333333	2	0.8282 0.0073 0.9773
TRT2	28.2857143	3	0.0164 0.0073 0.0077
TRT3	25.0000000	4	0.8095 0.9773 0.0077

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: SURVAT

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 52 MSE= 9.813071

Critical Value of Studentized Range= 3.753

Comparisons significant at the 0.05 level are indicated by ****.

LEVEL	Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	Effect	Coefficients
TRT2	- CONTROL	-0.209	2.993	6.196		
TRT2	- TRT1	0.163	3.252	6.342	***	
TRT2	- TRT3	0.143	3.286	6.428	***	
CONTROL	- TRT2	-6.196	-2.993	0.209		
CONTROL	- TRT1	-2.892	0.259	3.409		
CONTROL	- TRT3	-2.910	0.292	3.495		
TRT1	- TRT2	-6.342	-3.252	-0.163	***	
TRT1	- CONTROL	-3.409	-0.259	2.892		
TRT1	- TRT3	-3.056	0.033	3.123		
TRT3	- TRT2	-6.428	-3.286	-0.143	**	
TRT3	- CONTROL	-3.495	-0.292	2.910		
TRT3	- TRT1	-3.123	-0.033	3.056		

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Dunnnett's One-tailed T tests for variable: SURVAT

NOTE: This tests controls the type I experimentwise error for

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 comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 52 MSE= 9.813071
 Critical Value of Dunnett's 1= 2.104

Comparisons significant at the 0.05 level are indicated by ****.

LEVEL	Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	Effect	Coefficients
TRT2	- CONTROL	-0.209	2.993	6.196		
TRT2	- TRT1	0.163	3.252	6.342	***	
TRT2	- TRT3	0.143	3.286	6.428	***	
CONTROL	- TRT2	-6.196	-2.993	0.209		
CONTROL	- TRT1	-2.892	0.259	3.409		
CONTROL	- TRT3	-2.910	0.292	3.495		
TRT1	- TRT2	-6.342	-3.252	-0.163	***	
TRT1	- CONTROL	-3.409	-0.259	2.892		
TRT1	- TRT3	-3.056	0.033	3.123		
TRT3	- TRT2	-6.428	-3.286	-0.143	**	
TRT3	- CONTROL	-3.495	-0.292	2.910		
TRT3	- TRT1	-3.123	-0.033	3.056		

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 20. ANALYSIS OF FOOD CONSUMPTION

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Food Mean

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 20. ANALYSIS OF FOOD CONSUMPTION

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Food Mean

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
 20. ANALYSIS OF FOOD CONSUMPTION

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Food Mean

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	5790.7548	1930.2516	1.25	0.3908

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
20. ANALYSIS OF FOOD CONSUMPTION

09:19 Thursday, June 27, 1996

General Linear Models Procedure Least Squares Means

LEVEL	FOOD LMEAN i/j	H0: LMEAN(i)=LMEAN(j)
CONTROL	454.322077	1
TRT1	430.013333	0.1084
TRT2	432.360000	0.1460
TRT3	428.978571	0.0998

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
20. ANALYSIS OF FOOD CONSUMPTION

09:19 Thursday, June 27, 1996

General Linear Models Procedure Tukey's Studentized Range (HSD) Test for variable: FOOD

NOTE: This test controls the type I experimentwise error rate.
Alpha= 0.05 Confidence= 0.95 df= 53 MSE= 1543.449
Critical Value of Studentized Range= 3.751

Comparisons significant at the 0.05 level are indicated by *****.

LEVEL Comparison	Lower Confidence Limit	Upper Confidence Limit	Mean
CONTROL - TRT2	-17.52	21.96	61.45
CONTROL - TRT1	-15.18	24.31	63.80
CONTROL - TRT3	-14.79	25.34	65.48
TRT2 - CONTROL	-61.45	-21.96	17.52
TRT2 - TRT1	-35.70	2.35	40.40
TRT2 - TRT3	-35.34	3.38	42.10
TRT1 - CONTROL	-63.80	-24.31	15.18
TRT1 - TRT2	-40.40	-2.35	35.70
TRT1 - TRT3	-37.69	1.03	39.76
TRT3 - CONTROL	-65.48	-25.34	14.79
TRT3 - TRT2	-42.10	-3.38	35.34
TRT3 - TRT1	-39.76	-1.03	37.69

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
21. COVariate ANALYSIS OF MALE BODY WEIGHT

09:19 Thursday, June 27, 1996

General Linear Models Procedure Class Level Information

CLASS	LEVEL	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 57

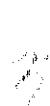
METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
21. COVariate ANALYSIS OF MALE BODY WEIGHT

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Dependent Variable: POSTM	Sum of Squares	Mean Square	F Value	Pr > F	
Source	DF				
Model	4	2320.0019	580.0005	1.40 0.2463	
Error		52	21514.7079	413.7444	
Corrected Total	56	23834.7098			
R-Square	C.V.	Root MSE	POSTM Mean		
0.097337	9.831095	20.341	206.90		
Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL PREM	3	1518.3812	506.1271	1.22 0.3106	
Source	DF	Type III SS	Mean Square	F Value	Pr > F

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
20. ANALYSIS OF FOOD CONSUMPTION



LEVEL	PRN	3	661.11549	220.37183	0.53	0.6619
		1	801.62076	801.62076	1.94	0.1699

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
21. COVARIATE ANALYSIS OF MALE BODY WEIGHT

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Least Squares Means

LEVEL	POSTN LSMEAN	Std Err LSMEAN	Pr > T HO:LSMEAN=0	LSMEAN Number
CONTROL	206.568767	5.695102	0.0001	1
TRT1	202.396119	5.586235	0.0001	2
TRT2	212.339270	5.373326	0.0001	3
TRT3	206.212514	5.437180	0.0001	4

Pr > |T| HO: LSMEAN(i)=LSMEAN(j)

i/j	1	2	3	4
1	0.6113	0.4579	0.9640	
2		0.2209	0.6276	
3			0.4256	
4				0.6276

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
21. COVARIATE ANALYSIS OF MALE BODY WEIGHT

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: POSTN

NOTE: This test controls the type I experimentwise error rate.
Alpha= 0.05 Confidence= 0.95 df= 52 MSE= 413.7444
Critical Value of Studentized Range= 3.753

Comparisons significant at the 0.05 level are indicated by ****.

LEVEL	Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT2	- CONTROL	-14.191	6.266	26.723
TRT2	- TRT3	-12.462	7.570	27.632
TRT2	- TRT1	-5.540	14.173	33.886
CONTROL	- TRT2	-26.723	-6.266	14.191
CONTROL	- TRT3	-19.590	1.304	22.097
CONTROL	- TRT1	-12.550	7.907	28.364
TRT3	- TRT2	-27.632	-7.570	12.492
TRT3	- CONTROL	-22.097	-1.304	19.490
TRT3	- TRT1	-13.459	6.603	26.665
TRT1	- TRT2	-33.886	-14.173	5.540
TRT1	- CONTROL	-28.364	-7.907	12.550

Dependent Variable: POSTF		General Linear Models Procedure	
Source	DF	Sum of Squares	Mean Square
Model	4	24264.198	6066.050
Error	52	30565.295	587.794
Corrected Total	56	54829.494	
		R-Square	C.V.
		0.442539	10.83259
		Root MSE	PostF Mean
		24.244	223.81
Source	DF	Type I SS	Mean Square F Value Pr > F

NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 52 MSE= 413.7444
Critical Value of Dunnett's T= 2.103

Comparisons significant at the 0.05 level are indicated by ****.

LEVEL	Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT2	- CONTROL	-14.191	6.266	26.723
TRT2	- TRT3	-12.462	7.570	27.632
TRT2	- TRT1	-5.540	14.173	33.886
CONTROL	- TRT2	-26.723	-6.266	14.191
CONTROL	- TRT3	-19.590	1.304	22.097
CONTROL	- TRT1	-12.550	7.907	28.364
TRT3	- TRT2	-27.632	-7.570	12.492
TRT3	- CONTROL	-22.097	-1.304	19.490
TRT3	- TRT1	-13.459	6.603	26.665
TRT1	- TRT2	-33.886	-14.173	5.540
TRT1	- CONTROL	-28.364	-7.907	12.550

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT

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General Linear Models Procedure

Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 57

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Class Level Information

Class	Levels	Values
LEVEL	56	54829.494

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Class Level Information

Class	Levels	Values			
LEVEL	DF	Type I SS	Mean Square	F Value	Pr > F

LEVEL	3	6404.524	2134.841	3.63	0.0187
PREF	1	17859.674	17859.674	30.38	0.0001
Source	DF	Type III SS	Mean Square	F Value	Pr > F
LEVEL	3	4187.040	1395.680	2.37	0.0807
PREF	1	17859.674	17859.674	30.38	0.0001

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT

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General Linear Models Procedure

Least Squares Means

LEVEL	POSTF LSMEAN	Std Err LSMEAN	Pr > T HO:LSMEAN=0	LSMEAN Number
CONTROL	229.014755	6.751436	0.0001	1
TRT1	234.084464	6.263749	0.0001	2
TRT2	211.816827	6.319759	0.0001	3
TRT3	220.820631	6.507576	0.0001	4

Pr > |T| HO: LSMEAN(i)=LSMEAN(j)

i/j	1	2	3	4
1	0.5849	0.0702	0.3843	
2	0.5849	0.0153	0.1486	
3	0.0702	0.0153	0.3285	
4	0.3843	0.1486	0.3285	

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

METOLACHLOR: REPRODUCTIVE TOXICITY TEST IN NORTHERN BOBWHITE
22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT

09:19 Thursday, June 27, 1996

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: POSTF

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 52 MSE= 587.7941
Critical Value of Studentized Range= 3.753

Comparisons significant at the 0.05 level are indicated by ****.

LEVEL Comparison	Simultaneous Lower Confidence Limit	Simultaneous Upper Confidence Limit
TRT1 - CONTROL	-23.864	0.519
TRT1 - TRT3	-15.182	8.730
TRT1 - TRT2	2.364	25.860

LEVEL Comparison	Simultaneous Lower Confidence Limit	Simultaneous Upper Confidence Limit
CONTROL - TRT1	-24.503	-0.519
CONTROL - TRT3	-16.573	8.211
CONTROL - TRT2	0.937	25.321
TRT3 - TRT1	-32.643	-8.730
		15.182